

WHAT IS CLAIMED IS:

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1. A program storage device readable by machine, tangibly embodying a program of instructions executable by the machine to perform method steps for providing accelerated data storage, said method steps comprising:

receiving a digital data stream at an input data transmission rate which is greater than a data storage rate of a target storage device;

compressing the digital data stream at a compression rate that increases the effective data storage rate of the target storage device; and

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storing the compressed digital data stream in the target storage device.

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2. The program storage device of claim 1, wherein the compression rate is at least equal to the ratio of the input data transmission rate to the data storage rate so as to provide continuous storage of the input digital data stream at the input data transmission rate.

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3. The program storage device of claim 1, wherein the instructions for performing the step of compressing comprise instructions for performing lossy data compression.

4. The program storage device of claim 1, wherein the instructions for performing the step of compressing step comprise instructions for performing lossless and lossy data compression.

5. The program storage device of claim 1, wherein the instructions for performing the step of compressing comprise instructions for performing the steps of:
reading a first parameter that is indicative of a compression type to be applied to the input digital data stream; and
5 selecting at least one allowable encoder based on the first parameter.

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6. The program storage device of claim 5, wherein the compression type is one of lossless data compression, lossy data compression, and a combination thereof.

7. The program storage device of claim 5, wherein the input digital data stream comprises a plurality of data blocks and wherein each data block has a first parameter associated therewith indicative of a compression type to be applied to the data block.

8. The program storage device of claim 5, further comprising instructions for performing the step of reading a second data parameter that is indicative of an amount of information loss that is permissible, if lossy data compression is selected.

8. The program storage device of claim 7, wherein the first and second data parameters are located within a header of the data block.

10. A program storage device readable by machine, tangibly embodying a program of instructions executable by the machine to perform method steps for providing accelerated retrieval of stored data, said method steps comprising:

retrieving a compressed digital data stream from a target storage device at a rate
5 equal to a data access rate of the target storage device; and

decompressing the compressed data at a decompression rate that increases the effective data access rate of the target storage device.

11. The program storage device of claim 10, wherein the instructions for performing the step of decompressing step comprise instructions for performing lossy data decomposition.

12. The program storage device of claim 10, wherein the instructions for performing the step of decompressing comprise instructions for performing a combination of lossless and lossy data decomposition.

13. The program storage device of claim 10, wherein the instructions for performing the step of decompressing comprise instructions for performing the steps of:

reading a first parameter that is indicative of a decompression type to be applied
20 to the compressed digital data stream; and

selecting at least one allowable decoder based on the first parameter.

14. The program storage device of claim 13, wherein the decompression type is one of lossless and lossy data decompression.

15. The program storage device of claim 10, further comprising instructions for performing the step of reading a second parameter that is indicative of an amount of information loss that is permissible, if lossy data decompression is selected.

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16. A method for providing accelerated data storage, comprising the steps of:
receiving a digital data stream at an input data transmission rate which is greater than a data storage rate of a target storage device;
compressing the digital data stream at a compression rate that increases the effective data storage rate of the target storage device; and
storing the compressed digital data stream in the target storage device.

17. The method of claim 16, wherein the compression rate is at least equal to the ratio of the input data transmission rate to the data storage rate so as to provide continuous storage of the input digital data stream at the input data transmission rate.

18. The method of claim 16, wherein the step of compressing is performed using lossy data compression.

19. The method of claim 16, wherein the step of compressing is performed using lossless and lossy data compression.

20. The method of claim 16, wherein the step of compressing comprises the steps of:

reading a first parameter that is indicative of a compression type to be applied to the input digital data stream; and

selecting at least one allowable encoder based on the first parameter.

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21. The method of claim 20, wherein the compression type is one of lossless data compression, lossy data compression, and a combination thereof.

22. The method of claim 20, wherein the input digital data stream comprises a plurality of data blocks and wherein each data block has a first parameter associated therewith indicative of a compression type to be applied to the data block.

23. The method of claim 20, further comprising the step of reading a second parameter that is indicative of an amount of information loss that is permissible, if lossy data compression is selected.

24. The method of claim 23, wherein the first and second parameters are located within a header of the data block.

25. A method for providing accelerated retrieval of stored data, comprising the steps of:

retrieving a compressed digital data stream from a target storage device at a rate equal to a data access rate of the target storage device; and

decompressing the compressed data at a decompression rate that increases the effective data access rate of the target storage device.

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26. The method of claim 25, wherein the step of decompressing is performed using lossy data decompression.

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27. The method of claim 25, wherein the step of decompressing is performed using lossless and lossy data decompression.

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28. The method of claim 25, wherein the step of decompressing comprises the steps of:

reading a first parameter that is indicative of a decompression type to be applied to the compressed digital data stream; and

selecting at least one allowable decoder based on the first parameter.

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29. The method of claim 28, wherein the decompression type is one of lossless and lossy data decompression.

30. The method of claim 28, further comprising the step of reading a second parameter that is indicative of an amount of information loss that is permissible, if lossy data decompression is selected.